

A new species of *Platymantis* (Amphibia: Ranidae) from the Sierra Madre Mountains, Luzon Island, Philippines

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Abstract.—A new species, *Platymantis sierramadrensis*, from the Sierra Madre Mountains in the provinces of Aurora and Isabela, Luzon Island, Philippines, is described. This species is distinguished from other Philippines species of *Platymantis* (*hazela* group) by its pale color, smooth skin, advertisement call, and other characters given in the diagnosis.

Recent field work in the Sierra Madre Mountains, northeastern Luzon Island, conducted separately by us in 1996 and 1997 resulted in the collection of 22 specimens (16 adults and 6 juveniles) of this distinctive frog. These specimens are platymantine frogs based on structure of the pectoral girdle (Brown 1952) and are referred to the *hazela* group of *Platymantis* based on digital structures (Brown et al. 1997). This species is an addition to the list of eight other species occurring on Luzon and the Central and Western Visayas and currently assigned to this group. The specimens are deposited in the California Academy of Sciences (CAS) and Philippine National Museum (NMPH).

Materials and Methods

Materials examined included holotypes of all other species of the *hazela* group of *Platymantis* from the Philippines. These holotypes with the exception of *P. panayensis* are in the CAS collections. The holotype of *P. panayensis* is in the NMPH.

Morphometric characters.—Snout–vent length (SVL), head length (HL), head breadth (HW), snout length (SnL), diameter of eye (ED), diameter of tympanum (TD),

tibia length (TiL), third finger length from proximal edge of basal tubercle (3FL), diameter of third finger disk (3FD), and diameter of third toe disk (3ToD).

Advertisement calls (Fig. 1) were recorded and analyzed, using a Kay Electrics SonaGraph (Model #550) and SIGNAL Sound Analysis System software.

Platymantis sierramadrensis, new species Fig. 2

Holotype.—NMPH 6465, an adult female, collected by Marisol Pedregosa in disturbed lowland forest at Sitio Mapidjas, Barangay Umiray, Municipality of General Nakar, Quezon Province, Luzon Island on 29 May 1996.

Paratypes.—CAS 204738, 204742–45 and NMPH 5980, 6461–63, 6466–67, CMNH 05678–79, collected in disturbed lowland forest in Sitio Mapidjas, Barangay Umiray, Municipality of Dingalan, Aurora Province, Luzon Island at the southern end of the Sierra Madre mountains.

Referred specimens.—CAS 204739–41 and NMPH 6464, 6470–74 from Palanan, northern Sierra Madre Mountains, Isabela Prov., Luzon Island. These specimens are in close agreement morphologically and in

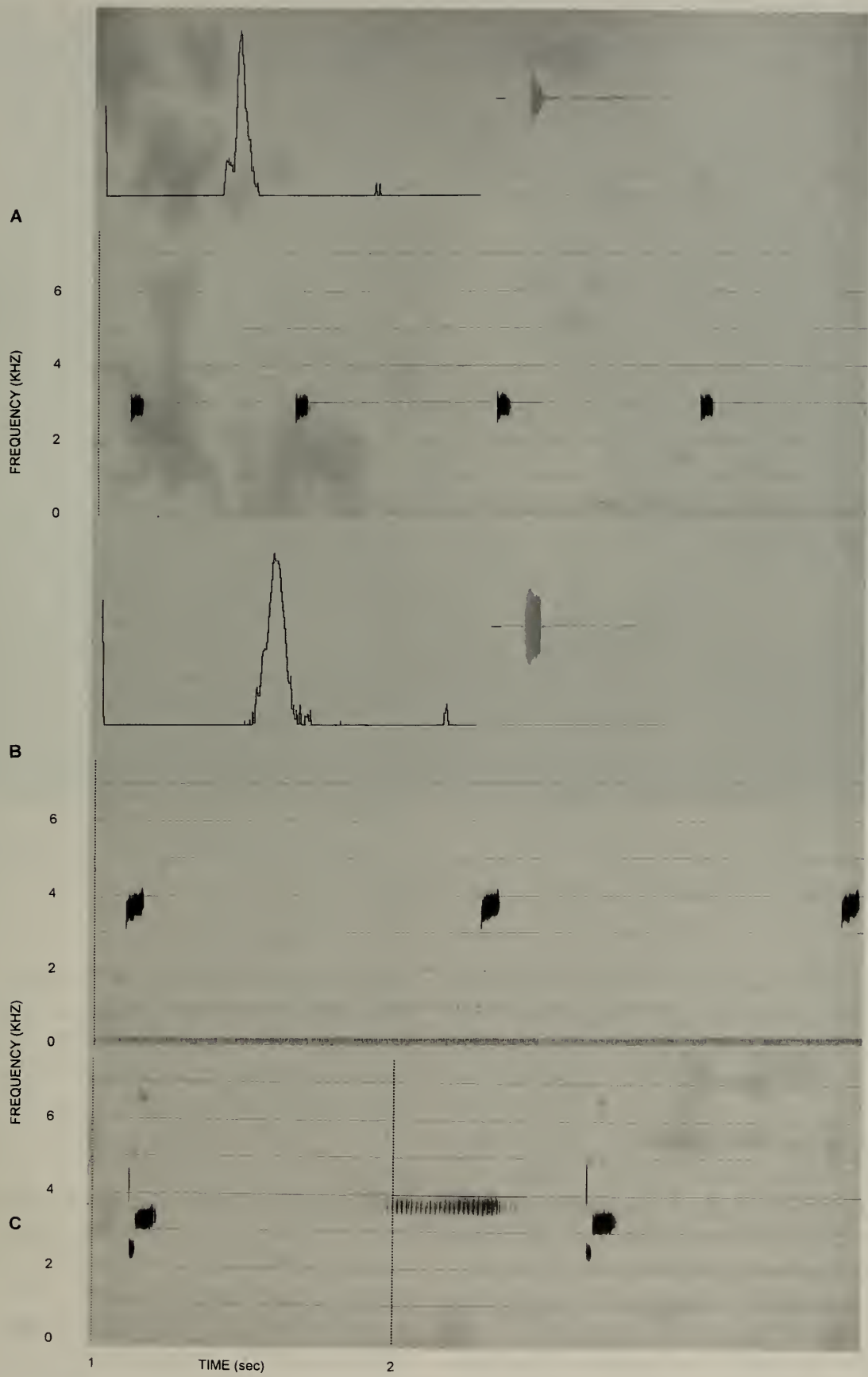


Fig. 1. Audiospectrograms of advertisement calls of (A) *Platymantis sierramadrensis* (NMPH 6472), (B) *P. subterrestris* (CAS 204322), (C) *P. montanus* (CAS 201705).



Fig. 2. *Platymantis sierramadrensis* (NMPH 6464) from Sierra Madre National Park, Isabella Province, Luzon Island. Color (in life), pale yellowish without dark markings on either body or limbs, is shown in this photograph of a male clinging to a branch of a forest shrub.

advertisement call with the type and paratypes. This population at the northern end of the Sierra Madre needs further investigation. It may prove to be a valid subspecies.

Diagnosis.—*Platymantis sierramadrensis* differs from other members of the *hazelae* group in having a pale creamy color without dark brown or blackish markings on body or limbs. In preserved specimens, faint, scattered brownish flecks are evident on dorsal and lateral surfaces. Other characters are: smooth skin, terminal phalanges rounded, and finger disks broader than those on toes, SVL 22.7–25.2 for mature males and 25.7 for one mature female; HL (39% of SVL) about equal to HW (40% of SVL) for 10 males and one female.

Description of holotype.—A gravid fe-

male; dorsum uniformly off white; dorsum and venter smooth; abdomen translucent, some internal organs visible; a conical tubercle on heel; measurements in mm: SVL 25.7, HL 10.0, HW 9.9, SnL 4.6, ED 3.6, TD 1.5, TiL 13.3, 3FL 3.7, 3FD 1.4, 3ToD 0.9.

Description.—SVL 22.7–25.2 for 10 mature males and 25.7 for one mature female; HL 37–42% (mean 39%) of SVL; HW 37–42% (mean 40%) of SVL; SnL 17–21% (mean 19%) of SVL; ED 12–15% (mean 14%) of SVL; TD 5–8% (mean 6%) of SVL; TiL 49–56% (mean 52%) of SVL; 3FL 14–17% (mean 15%) of SVL; 3FD 5–7% (mean 6%) of SVL; 3ToD 3–5% (mean 4%) of SVL; tympanum exposed; lore moderately oblique, concave; vomerine teeth only slightly protruding, patches widely

separated; fingers with minute webs at base; fingers except first with broad disks; fingers with shallow circum-marginal grooves; first finger shortest, third finger longest, and second and fourth about equal in length; subarticular tubercles large, round, low; a row of low, inconspicuous supernumerary tubercles on palm; inner, middle and outer metacarpal tubercles oval, vague, inner and middle about equal in size; larger than outer; hind limb long; toes webbed to distal edge of tubercle on first and second, to distal edge of basal tubercle on third, and to midway between tubercles on fifth; disks of toes narrower than those of fingers, subarticular tubercles rounded, low; plantar area smooth; inner metatarsal tubercle elongated, outer vague; dorsum smooth, without tubercles; venter generally smooth, coarsely granular in some specimens.

Variations.—Based on the limited sample available to us, there are a few small differences in the body proportions between the northern (Isabela Province) and the southern (Aurora Province) populations. However, it is not possible to say whether these differences are significant because of the small samples. The northern population has barely overlapping values for HL/SVL (40–42 versus 37–40%) and TD/SVL (5–6 versus 6–8%) and non-overlapping values for 3FD/SVL (16–17 versus 14–15%). The two general collecting sites are far apart (ca. 200 km) and the forest environment is no longer continuous. These populations may not interact in any way.

Color (in life).—Pale cream without dark bars or other marks on limbs or body and without areolations.

Color (in preservative).—Pale cream without dark bars or other marks. Small brownish pigment flecks are scattered on dorsal and lateral surfaces. The specimens from the northern Sierra Madre (Isabela Province) appear slightly darker.

Reproduction.—The only mature female in the collections has about 10 ovarian eggs of various sizes, the largest being 2.8 mm in diameter. The eggs are yellow in color

and are devoid of dark pigments, suggesting that the species undergoes direct development like other members of *Platymantis*. This female was collected in May, 1996 in Aurora Province. However, rainfall occurs throughout the year, and breeding activities may also be non-seasonal.

Advertisement call.—The call of this frog sounds like “pek-pek-pek” produced in a forceful manner. Each note ranges from 2500 to 3250 Hz with a duration of 0.05 to 0.06 of a second. The time interval between notes is about 0.53 to 0.64 seconds (Fig. 1).

Ecological notes.—Specimens of this species were collected in virgin and disturbed lowland forest at altitudes of 55 to 550 m. They were observed on leaves of low shrubby plants and screw pines from 0.5 to 2.5 m above the ground. In Palanan, Isabela (northern part of Sierra Madre), adult males were observed and heard calling in March–April, 1997 while sitting on leaves of shrubs.

Etymology.—The species name is derived from Sierra Madre Mountains, the type locality.

Comparisons.—*Platymantis sierramadrensis*, based on digital characters, belongs in the *hazela* group. This species differs from the other species of the group primarily in the distinctive color pattern. In life, the color appears cream to creamy yellow (Fig. 1) without the dark markings and/or areolations on the body and limbs that characterize other species of this group (Brown et al. 1997). This species also differs in the appearance of the ventral body wall. It permits a partial view of underlying organs, especially eggs in gravid females.

In terms of size (SVL) at maturity, based on those species with samples of fine or more specimens, this species is among those with ranges from about 20 to 28 mm for males and with ranges widely overlapping when species are compared (Brown et al. 1997).

The species of the *hazela* group of *Platymantis* are known only from the central and northern islands of the Philippines

in contrast to the ranges exhibited by the *guentheri* group (throughout the Philippines), and the *dorsalis* group (Philippines, Palau Islands, Melanesia, and New Guinea). Three of previously recognized species of the *hazela* group are known from the central islands and five species are known from mountain ranges or isolated mountains on the northern island of Luzon. *Platymantis sierramadrensis* does not change this zoogeographic concept. It simply adds a sixth species of the group for Luzon Island, a species apparently isolated in a previously little known mountain range, the Sierra Madre. *Platymantis sierramadrensis* is not the first new species of this genus to be described from the Sierra Madres. It is preceded by *Platymantis pygmaeus* (*dorsalis* group, Brown et al. 1998).

Advertisement calls have been recorded for three species of the *hazela* group (*sierramadrensis*, *montanus*, and *subterrestris*). The note structure is similar for these three species, but the frequencies and intervals between notes differ (Fig. 1).

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